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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,547	01/16/2002	Pinyen Lin	109128	7714

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OLIFF & BERRIDGE, PLC.  
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EXAMINER

KUMAR, SRILAKSHMI K

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/683,547

Applicant(s)

LIN ET AL.

Examiner

Srilakshmi K. Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (US 6,445,489) in view of Ota (US 3,668,106).

As to independent claim 1, Jacobson et al disclose an electrophoretic display device (Fig. 1) comprising a unitary spacer layer (Fig. 9, item 62, col. 3, lines 58-60, col. 10, lines 52-59) sandwiched between two conductive film substrates (Fig. 9, col. 10, lines 52-62), at least one of which is transparent (col. 10, lines 52-62),

Jacobson et al do not disclose where the unitary spacer layer defines a multiplicity of individual reservoirs, where the individual reservoirs being filled with a display liquid.

Ota discloses a unitary spacer layer (Fig. 13) with individual reservoirs. In col. 10, lines 7-62, Ota discloses individual reservoirs which are filled with display liquid, and further which are addressable with an electric field in order to produce images.

It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

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As to independent claim 6, limitations of claim 1, and further comprising, wherein the spacer layer is selected from the group consisting of (a) a screen in which holes within the screen define the individual reservoirs, (b) a laser punched spacer layer comprised of a sheet having holes laser punched therein in which the laser punched holes define the individual reservoirs, (c) a pocket spacer layer comprised of sheets joined together and containing a pattern of pockets within the sheets in which the pockets define the individual reservoirs, (d) an etched photoresist layer formed upon one of the conductive film substrates in which holes etched in the photoresist layer define the individual reservoirs, and (e) a composite etched layer comprised of a composite of two photoresist layers sandwiching a conductive film in which holes etched in the composite define the individual reservoirs. Although Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer, it would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs. Ota discloses in col. 10, lines 7-62, the spacer layer with individual reservoirs. It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

As to dependent claim 2, limitations of claim 1, and further comprising, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns. Although Jacobson et al and Ota do not disclose the width of the individual reservoirs, it would have been obvious to one of ordinary skill in the art that the reservoirs could have been of any width as desired by the user/manufacturer.

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As to dependent claim 3, limitations of claim 1, and further comprising, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns. Ota discloses in Fig. 13, individual reservoirs showing solid partition portions. Although Ota does not disclose where the solid partition portions are of a certain thickness, it would have been obvious to one of ordinary skill in the art that the partitions could have been of any thickness as desired by the user/manufacturer.

As to dependent claim 4, limitations of claim 1, and further comprising, wherein the display liquid has a color and contains one set of particles with a different, contrasting color from the color of the colored display liquid. Ota discloses where the display liquid has a color and contains one set of particles with a different, contrasting color from the color of the colored display liquid in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 5, limitations of claim 1, and further comprising, wherein the display liquid is transparent and contains at least two sets of particles with different, contrasting color to each other. Ota discloses where the display liquid is transparent and contains at least two sets of particles in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claims 7-11, see limitations of claim 6, above.

As to dependent claim 12, limitations of claim 10, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of a first pocket sheet in which the display liquid has a first color and a second pocket sheet layer in which the display liquid has a second color, wherein the first pocket sheet and the second pocket sheet are placed atop each

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other and wherein there are no overlapping pockets in the composite pocket layer as disclosed by Ota in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 13, limitations of claim 12, and further comprising, wherein the first color is black and the second color is an additional color. Ota discloses in col. 10, lines 52-62, where the first color is black and the second color is an additional color.

As to dependent claim 14, limitations of claim 10, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of three pocket sheets, each pocket sheet exhibiting a different color, wherein the three pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer disclosed by Ota in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 15, limitations of claim 14, and further comprising, wherein the three colors are cyan, magenta and yellow. Ota discloses different colors in col. 8, lines 6-34.

As to dependent claim 16, limitations of claim 10, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of four pocket sheets, each sheet exhibiting a different color, wherein the four pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer disclosed by Ota in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 17, limitations of claim 16, and further comprising, wherein the four colors are cyan, magenta, yellow and black. Ota discloses different colors in col. 8, lines 6-34.

As to dependent claim 18, limitations of claim 6, and further comprising, wherein the

spacer layer is the etched photoresist layer. Although Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer, it would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs. Ota discloses in col. 10, lines 7-62, the spacer layer with individual reservoirs. It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

As to dependent claim 19, limitations of claim 6, and further comprising, wherein the spacer layer is the composite etched layer. Although Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer, it would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs. Ota discloses in col. 10, lines 7-62, the spacer layer with individual reservoirs. It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

As to dependent claim 20, limitations of claim 19, and further comprising, wherein the conductive film of the composite etched layer is a metal. Although Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer, it would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs. Ota discloses in col. 10, lines 7-62, the spacer layer with individual

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reservoirs. It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

As to dependent claim 21, limitations of claim 6, and further comprising, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns. Although Jacobson et al and Ota do not disclose the width of the individual reservoirs, it would have been obvious to one of ordinary skill in the art that the reservoirs could have been of any width as desired by the user/manufacturer.

As to dependent claim 22, limitations of claim 6, and further comprising, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns. Ota discloses in Fig. 13, individual reservoirs showing solid partition portions. Although Ota does not disclose where the solid partition portions are of a certain thickness, it would have been obvious to one of ordinary skill in the art that the partitions could have been of any thickness as desired by the user/manufacturer.

As to dependent claim 23, limitations of claim 6, and further comprising, wherein the device further includes a conductive path on a bottom surface of one of the conductive film substrates in a pattern such that each of the individual reservoirs are separately addressable with an electric field. Ota discloses where the individual reservoirs are separately addressable in col. 10, lines 7-62.

As to dependent claim 24, limitations of claim 6, and further comprising, wherein the



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transparent conductive film substrate comprises a film of polyethylene terephthalate coated with indium tin oxide (col. 4, lines 45-47)

As to dependent claim 25, limitations of claim 6, and further comprising, wherein the transparent conductive film substrate comprises a film of polyethylene terephthalate coated with silver. Although Jacobson et al do not disclose where the film is coated with silver, it would have been obvious to one of ordinary skill in the art that silver could have been used as silver has similar properties to that of indium tin oxide.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Srilakshmi K. Kumar** whose telephone number is **(703) 306 5575**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached at (703) 305-9720.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703 305 9720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Srilakshmi K. Kumar  
Examiner  
Art Unit 2675

SKK  
March 6, 2004

  
DENNIS-DOON CHOW  
PRIMARY EXAMINER